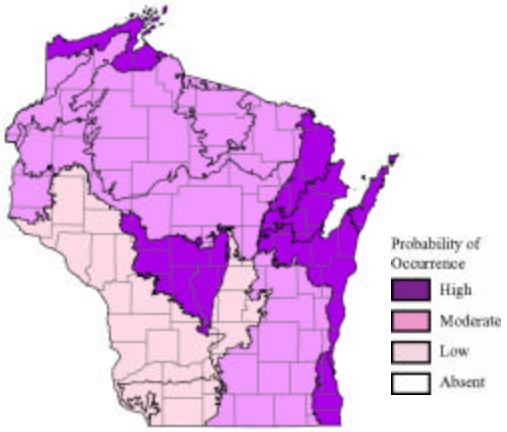
Mudpuppy (*Necturus maculosus*)

Species Assessment Scores*

State rarity:	2
State threats:	3
State population trend:	4
Global abundance:	2
Global distribution:	4
Global threats:	3
Global population trend:	4
Mean Risk Score:	3.1
Area of importance:	3

* Please see the Description of Vertebrate Species Summaries (Section 3.1.1) for definitions of criteria and scores.



Ecological Landscape Associations
Please note that this is not a range map. Shading does not imply that the species is present throughout the Landscape, but represents the probability that the species occurs somewhere in the Landscape.

Landscape -community Combinations of Highest Ecological Priority

Ecological Landscape	Community
Central Lake Michigan Coastal	Lake Michigan
Central Lake Michigan Coastal	Warmwater rivers
Central Sand Plains	Impoundments/Reservoirs
Central Sand Plains	Warmwater rivers
Forest Transition	Impoundments/Reservoirs
Forest Transition	Warmwater rivers
North Central Forest	Impoundments/Reservoirs
North Central Forest	Inland lakes
North Central Forest	Warmwater rivers
Northeast Sands	Coldwater streams
Northeast Sands	Impoundments/Reservoirs
Northeast Sands	Inland lakes
Northeast Sands	Warmwater rivers
Northern Highland	Inland lakes
Northern Highland	Warmwater rivers
Northern Lake Michigan Coastal	Impoundments/Reservoirs
Northern Lake Michigan Coastal	Inland lakes
Northern Lake Michigan Coastal	Lake Michigan
Northern Lake Michigan Coastal	Warmwater rivers
Northwest Lowlands	Warmwater rivers
Northwest Sands	Inland lakes
Northwest Sands	Warmwater rivers
Southeast Glacial Plains	Impoundments/Reservoirs
Southeast Glacial Plains	Inland lakes
Southeast Glacial Plains	Warmwater rivers
Southern Lake Michigan Coastal	Impoundments/Reservoirs
Southern Lake Michigan Coastal	Inland lakes
Southern Lake Michigan Coastal	Lake Michigan
Southern Lake Michigan Coastal	Warmwater rivers
Superior Coastal Plain	Coldwater streams
Superior Coastal Plain	Lake Superior

Ecological Landscape	Community
Superior Coastal Plain	Warmwater rivers
Western Prairie	Warmwater rivers

Threats and Issues

- Dams are barriers to upstream migration for this species.
- More research is needed to determine the extent to which dams may result in isolation and potential long-term genetic stagnation for this species.
- Excessive sediments and associated turbidity have buried rock structure and reduced plant beds in some rivers, reducing essential nesting habitats and cover for adult and juvenile mudpuppies.
- Evidence suggests that commercial exploitation of this species may be harming some populations.
- The introduction of the sea lamprey has resulted in the reduction of mudpuppy densities in river stretches associated with the Great Lakes that are treated with TFM (a chemical used to kill sea lamprey larvae in streams).
- TFM lampricide indiscriminately kills juvenile and adult mudpuppies and has been shown to cause local population declines where used. Long-term effects of multiple treatments may cause significant population declines unless source populations can emigrate to repopulate treated stretches of rivers.
- Invasive aquatic animals such as zebra mussels and bythotrephes change productivity pathways and food web dynamics of aquatic systems, probably reducing food supply and quality for mudpuppies.
- This species appears to be negatively affected by excessive Biological Oxygen Demand (BOD) or other pollutants. This salamander has been nearly or completely eliminated from streams with a history of water quality abuse. The Sheboygan River is an example.
- Scientific research has created a major demand for specimens from the biological supply industry.

Priority Conservation Actions

- Permanent protection of shorelines and buffers would benefit the species throughout its range.
- Restoration of instream habitat, along with watershed and shoreline protection efforts, would benefit this species.
- Harvest records need to be tracked to evaluate commercial trends.
- Changes in regulations may be needed depending on harvest levels and population trends.
- Major strides in policy and education are needed to ensure that wildlife habitat is represented and considered in zoning and planning decisions.
- Fisheries policy needs to better account for mudpuppy habitat and ecology.
- Research is needed to determine the long term effects of TFM on mudpuppy populations, and to develop sea lamprey-specific control methods that do not harm mudpuppies.
- Education is needed to dispel common misconceptions about the species, such as that mudpuppies are poisonous, that mudpuppies are detrimental to game fish, and that mudpuppies should be killed.
- Long term monitoring is needed to evaluate population status and track trends of representative populations.
- Better coordination between fisheries and wildlife agencies would improve mudpuppy monitoring, research and management efforts.
- The **spectaclecase and salamander mussels** are also Species of Greatest Conservation Need. Because the juvenile stages of these mussels use the mudpuppy as a host, actions taken to preserve the mudpuppy may aid conservation of spectaclecase and salamander mussel populations.